AL101S Steering Gear Alarm System

Chapter 0

Factory Default

1. ECR

1.1 Dip Switch

Switch	ON	OFF	Default
1	Operation Mode	Test Mode	ON
2	No DC blinking	DC blinking Available	ON
3	Full Relay output Mode	Half relay output Mode	ON
4	-	-	-
5	-	-	-
6	Operation Mode	Download Mode	ON

1.2 Resistor Termination ON/OFF switch: OFF

2. FWD / AFT

1.1 Dip Switch

Switch	ON	OFF	Default
1	Operation Mode	Test Mode	ON
2	No DC blinking	DC blinking Available	ON
3	Full Relay output Mode	Half relay output Mode	ON
4	-	-	-
5	-	-	-
6	Operation Mode	Download Mode	ON

1.2 Resistor Termination ON/OFF switch: OFF

CAUTION!

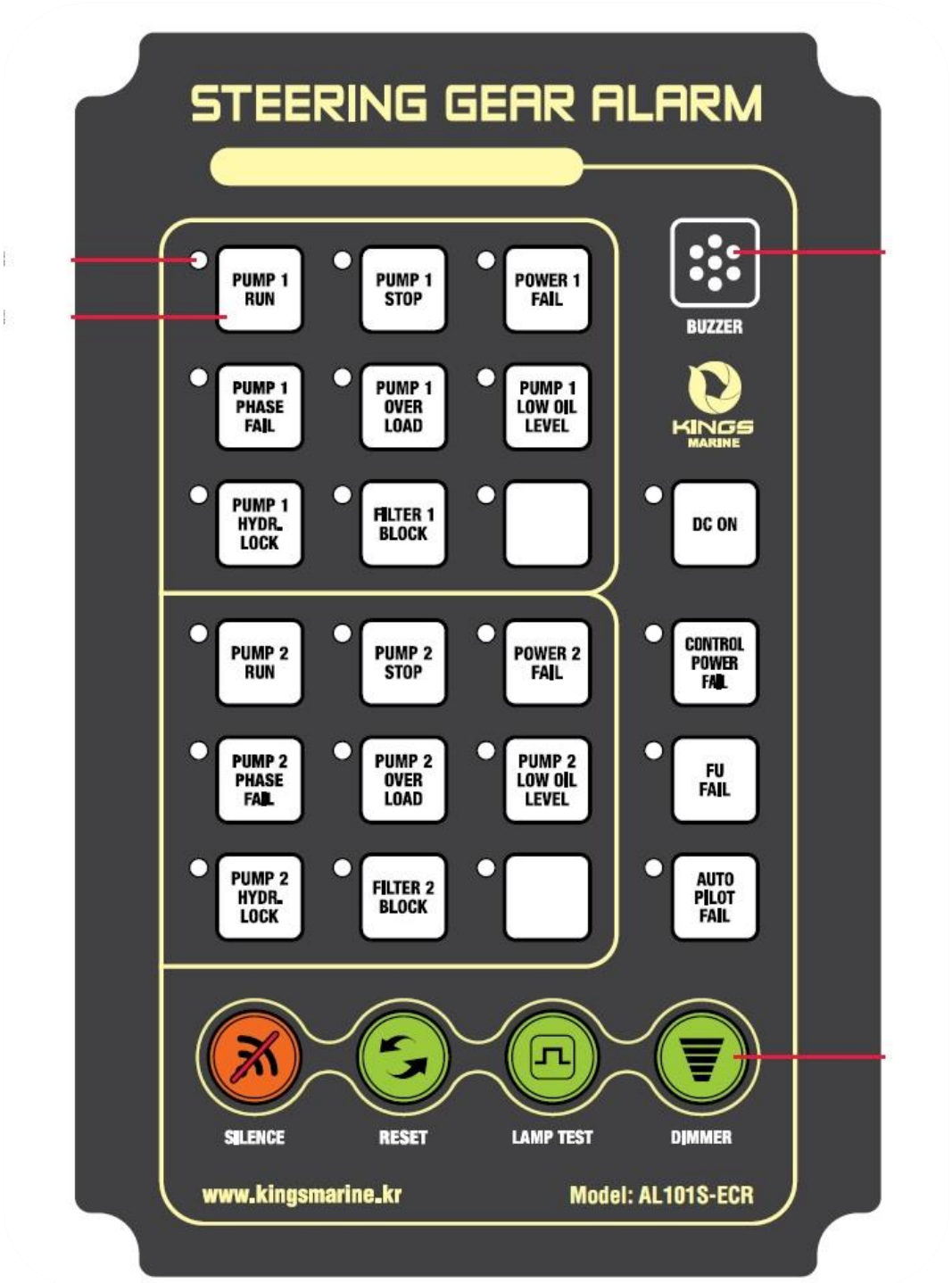
ECR / FWD / AFT Relay output mode(Full / Half) run independently.

AL101S Steering Gear Alarm System

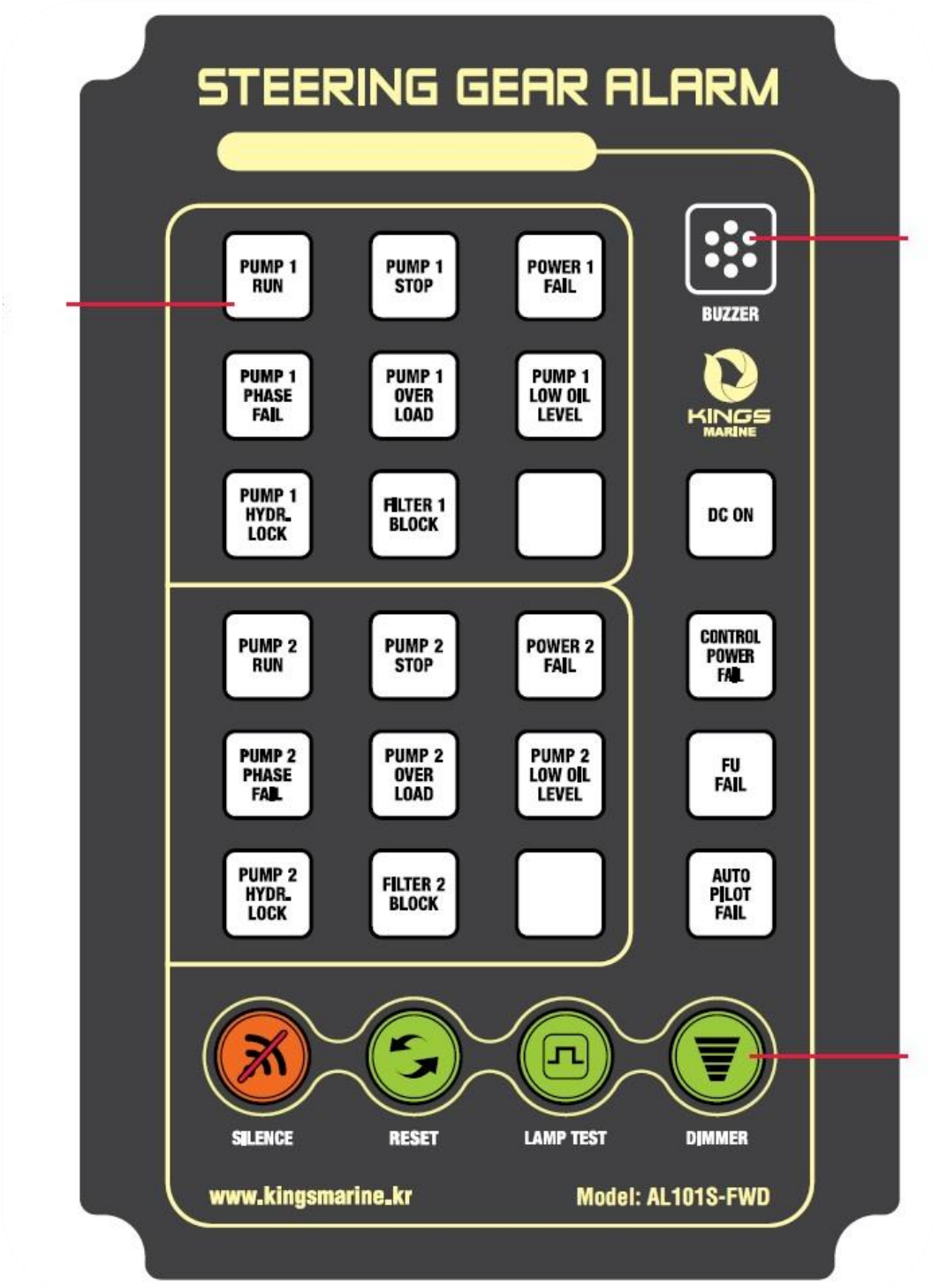
Chapter 1

ECR / FWD / AFT Operation

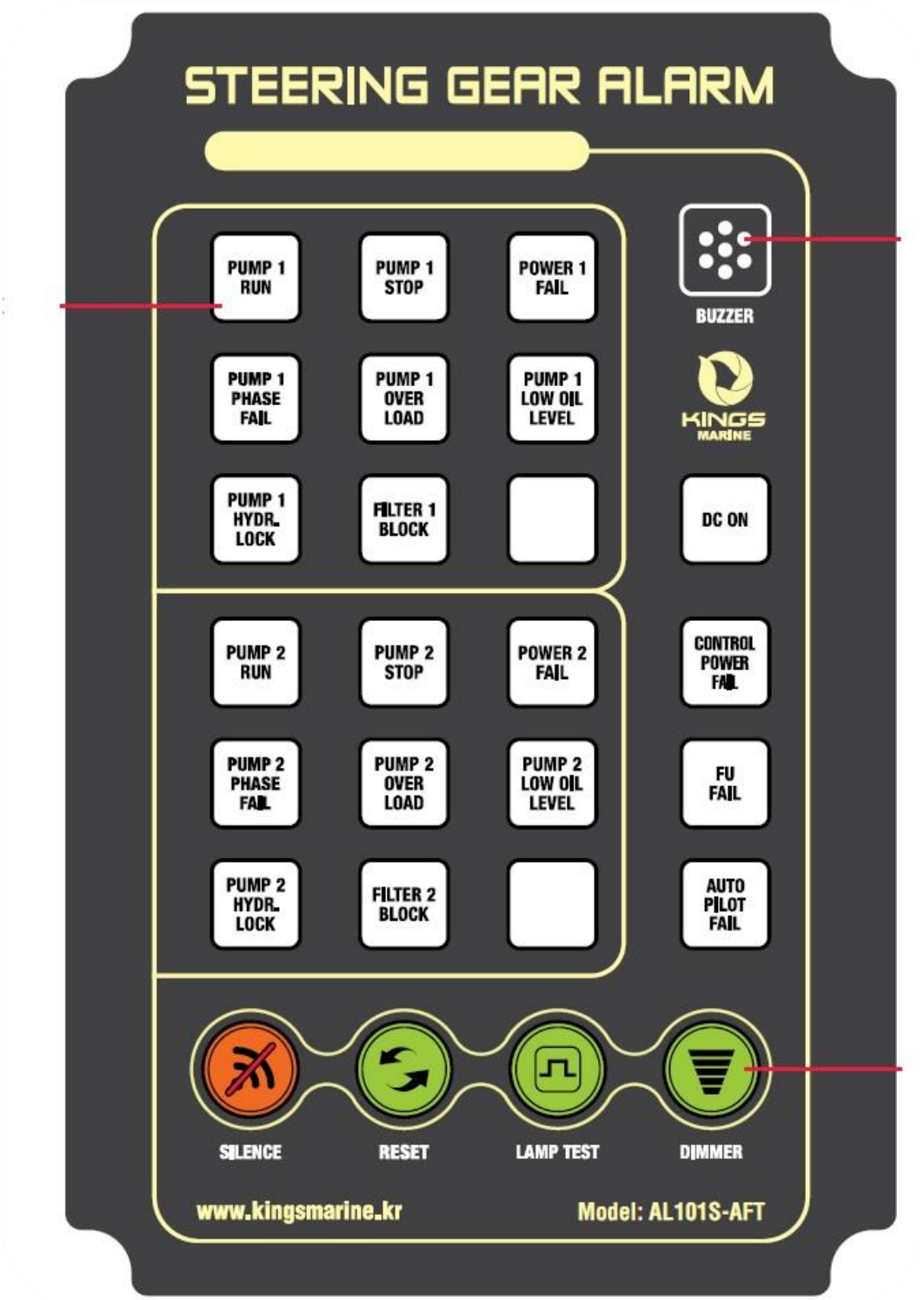
AL101S-ECR


STEERING GEAR ALARM
PUMP 1 RUN
PUMP 1 STOP
POWER 1 FAIL
BUZZER
PUMP 1 PHASE FAIL
PUMP 1 OVER LOAD
PUMP 1 LOW OIL LEVEL
KINGS MARINE
PUMP 1 HYDR. LOCK
FILTER 1 BLOCK
DC ON
PUMP 2 RUN
PUMP 2 STOP
POWER 2 FAIL
CONTROL POWER FAIL
PUMP 2 PHASE FAIL
PUMP 2 OVER LOAD
PUMP 2 LOW OIL LEVEL
FU FAIL
PUMP 2 HYDR. LOCK
FILTER 2 BLOCK
AUTO PILOT FAIL
SILENCE
RESET
LAMP TEST
DIMMER
www.kingsmarine.kr
Model: AL101S-ECR

AL101S-FWD


STEERING GEAR ALARM
PUMP 1 RUN
PUMP 1 STOP
POWER 1 FAIL
BUZZER
PUMP 1 PHASE FAIL
PUMP 1 OVER LOAD
PUMP 1 LOW OIL LEVEL
KINGS MARINE
PUMP 1 HYDR. LOCK
FILTER 1 BLOCK
DC ON
PUMP 2 RUN
PUMP 2 STOP
POWER 2 FAIL
CONTROL POWER FAIL
PUMP 2 PHASE FAIL
PUMP 2 OVER LOAD
PUMP 2 LOW OIL LEVEL
FU FAIL
PUMP 2 HYDR. LOCK
FILTER 2 BLOCK
AUTO PILOT FAIL
SILENCE
RESET
LAMP TEST
DIMMER
www.kingsmarine.kr
Model: AL101S-FWD

AL101S-AFT


STEERING GEAR ALARM
PUMP 1 RUN
PUMP 1 STOP
POWER 1 FAIL
BUZZER
PUMP 1 PHASE FAIL
PUMP 1 OVER LOAD
PUMP 1 LOW OIL LEVEL
KINGS MARINE
PUMP 1 HYDR. LOCK
FILTER 1 BLOCK
DC ON
PUMP 2 RUN
PUMP 2 STOP
POWER 2 FAIL
CONTROL POWER FAIL
PUMP 2 PHASE FAIL
PUMP 2 OVER LOAD
PUMP 2 LOW OIL LEVEL
FU FAIL
PUMP 2 HYDR. LOCK
FILTER 2 BLOCK
AUTO PILOT FAIL
SILENCE
RESET
LAMP TEST
DIMMER
www.kingsmarine.kr
Model: AL101S-AFT

1) SILENCE Key

This key able to maintain to each lamp′s activation or deactivation
After buzzer has activation, this key able to stop to buzzer sound

CAUTION!

If setting Dip Switch “3” setting done ON, relay output will be working full mode.
Meanwhile if setting Dip switch “3” OFF relay output will be working half mode

2) RESET Key

This key able to re-boot to all lamp′s activation and deactivation.
Press this key then press SILENCE Key again to maintain to each lamp′s activation and deactivation. Or check buzzer sound activation

3) LAMP TEST Key

This key able to all LAMP ON even each lamp has activation or deactivation
This key check to LAMP itself working.
If on pressing this key both of activation and deactivation lamp ON at once.
Then if release this key the deactivation lamp will be OFF

4) DIMMER Key

This key able to adjust to LAMP brightness
Brightness has total 5 steps.

Description of AL101S-ECR/FWD/AFT LAMP

1) FU FAIL LAMP
Input signal “1” second later LAMP activate

2) PUMP HYDR. LOCK LAMP
Input signal “1” second later LAMP activate

3) PHASE FAIL LAMP
Input signal “2” second later LAMP activate

4) PUMP LOW OIL LEVEL LAMP
Input signal “3” second later LAMP activate

5) DC ON LAMP
Depend on input signal LAMP will be activate to “RED” or “GREEN”
(Please see the chapter 3 Input & output signal terminal)

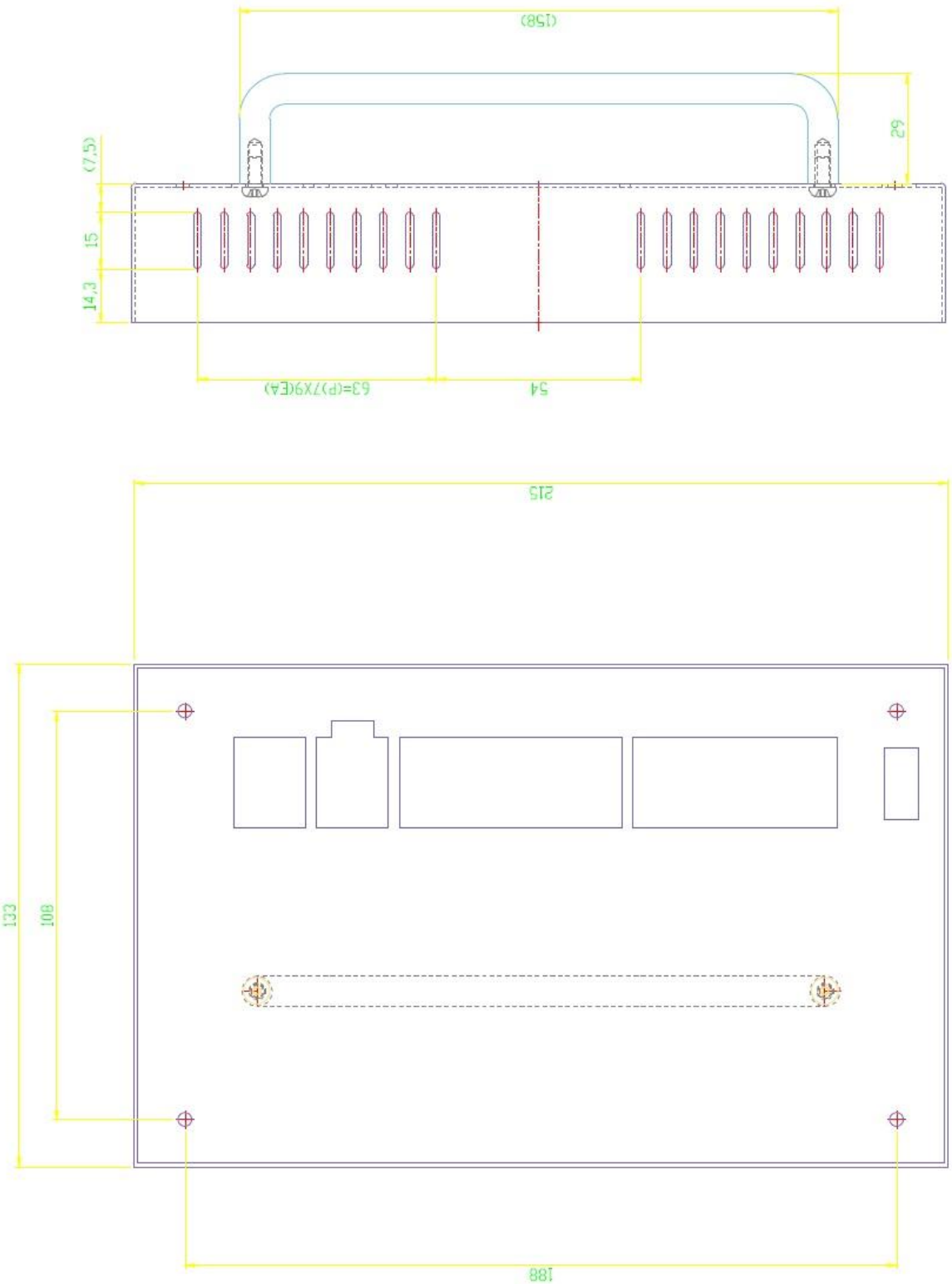
CAUTION!

Except above FU FAIL / **PUMP HYDR. LOCK** / PHASE FAIL / PUMP LOW OIL LEVEL these “4” kind LAMP, the other all LAMP will be activate once it input signal activate.

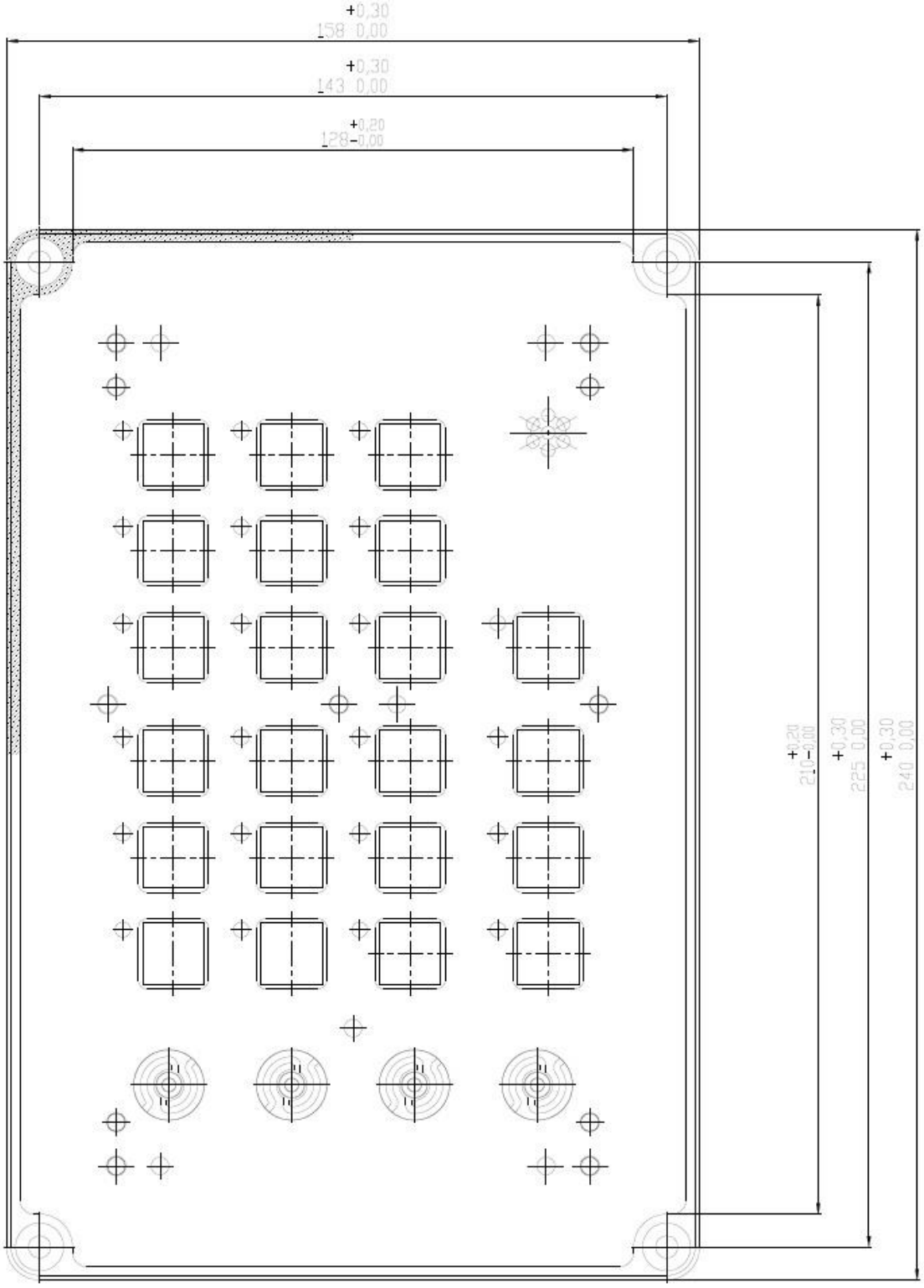
Chapter 2

ECR / FWD / AFT
Case size

Cut hole dimension



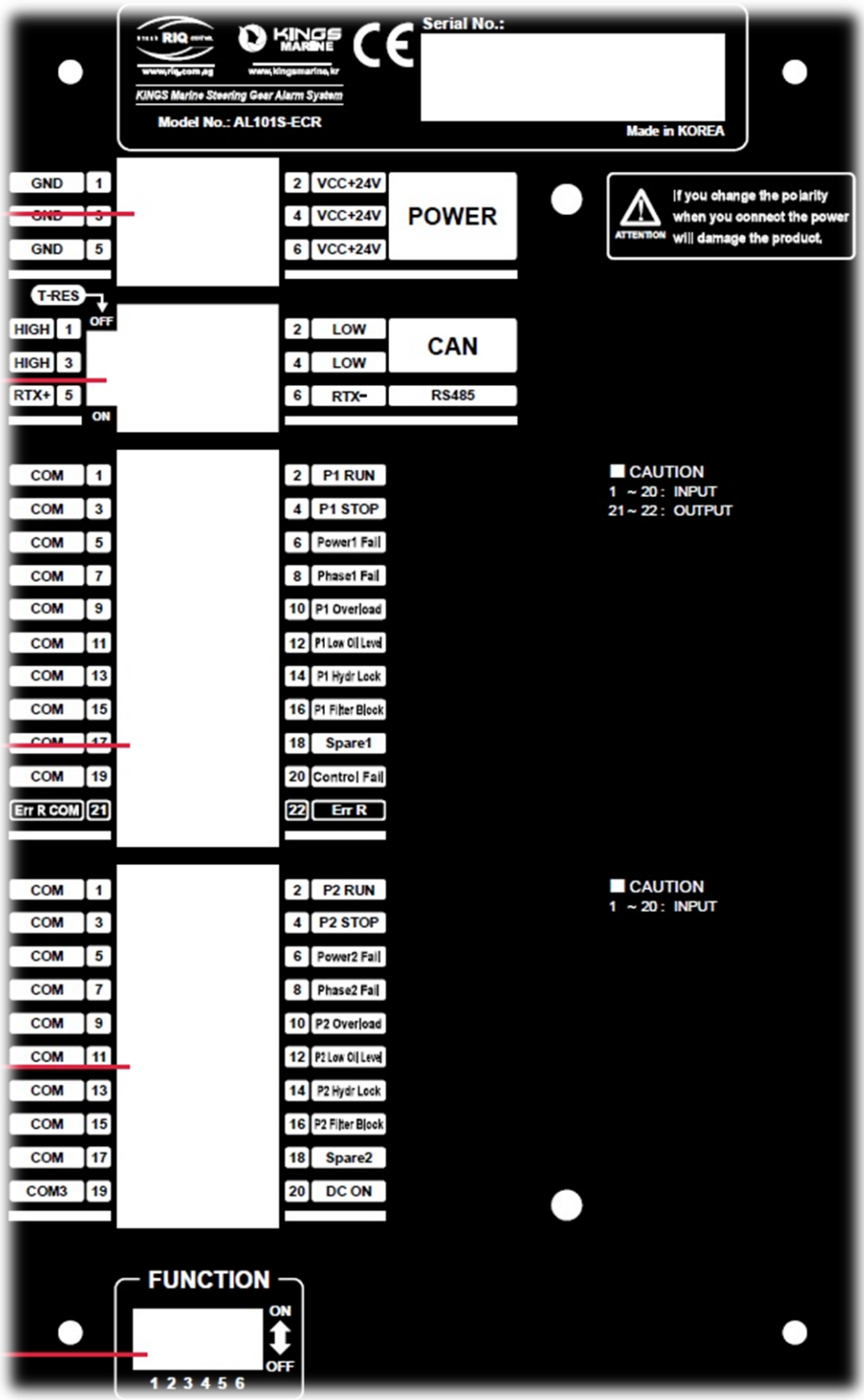
Fontal case dimension



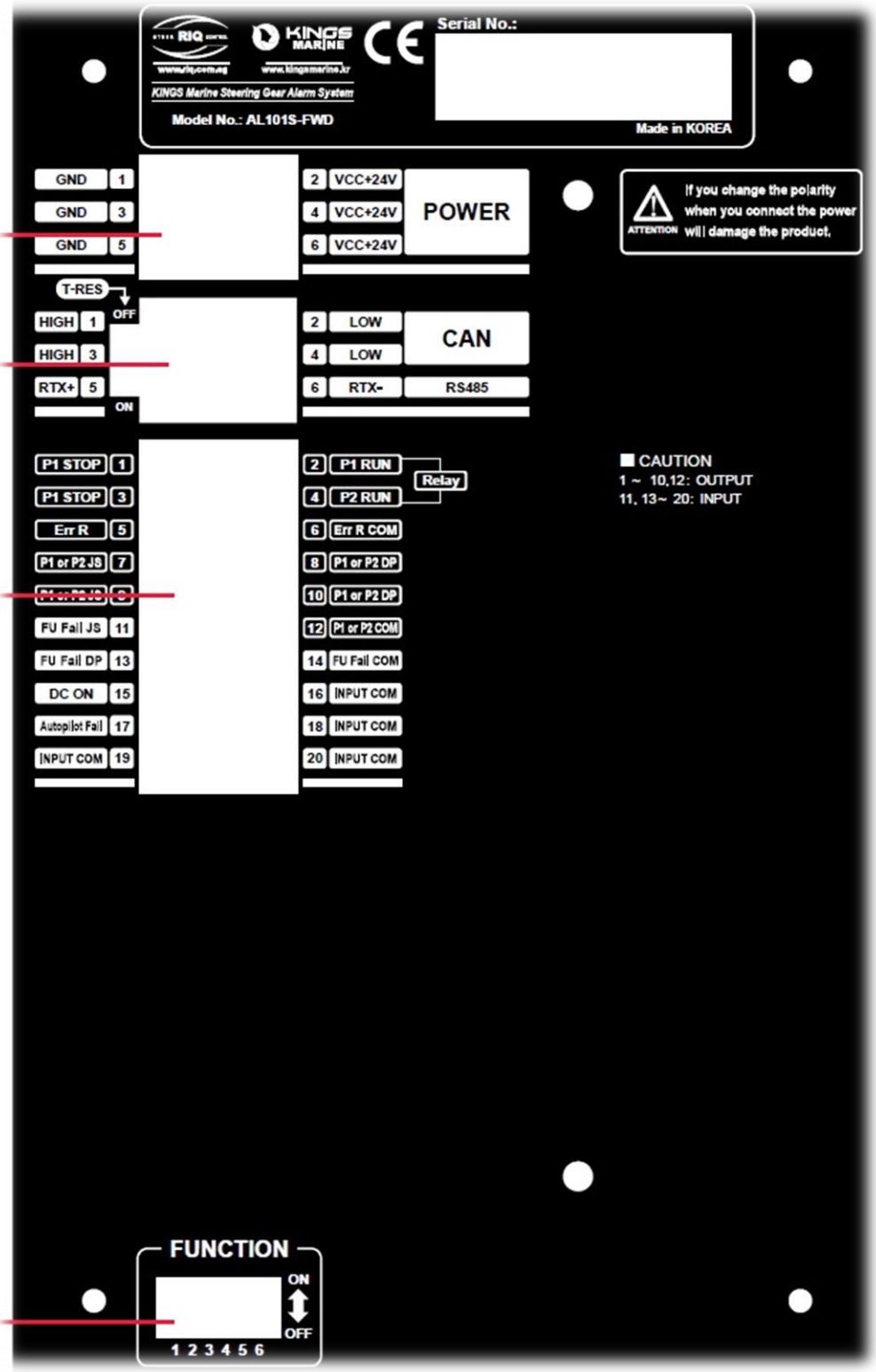
Chapter 3

ECR / FWD / AFT
Input & output signal terminal

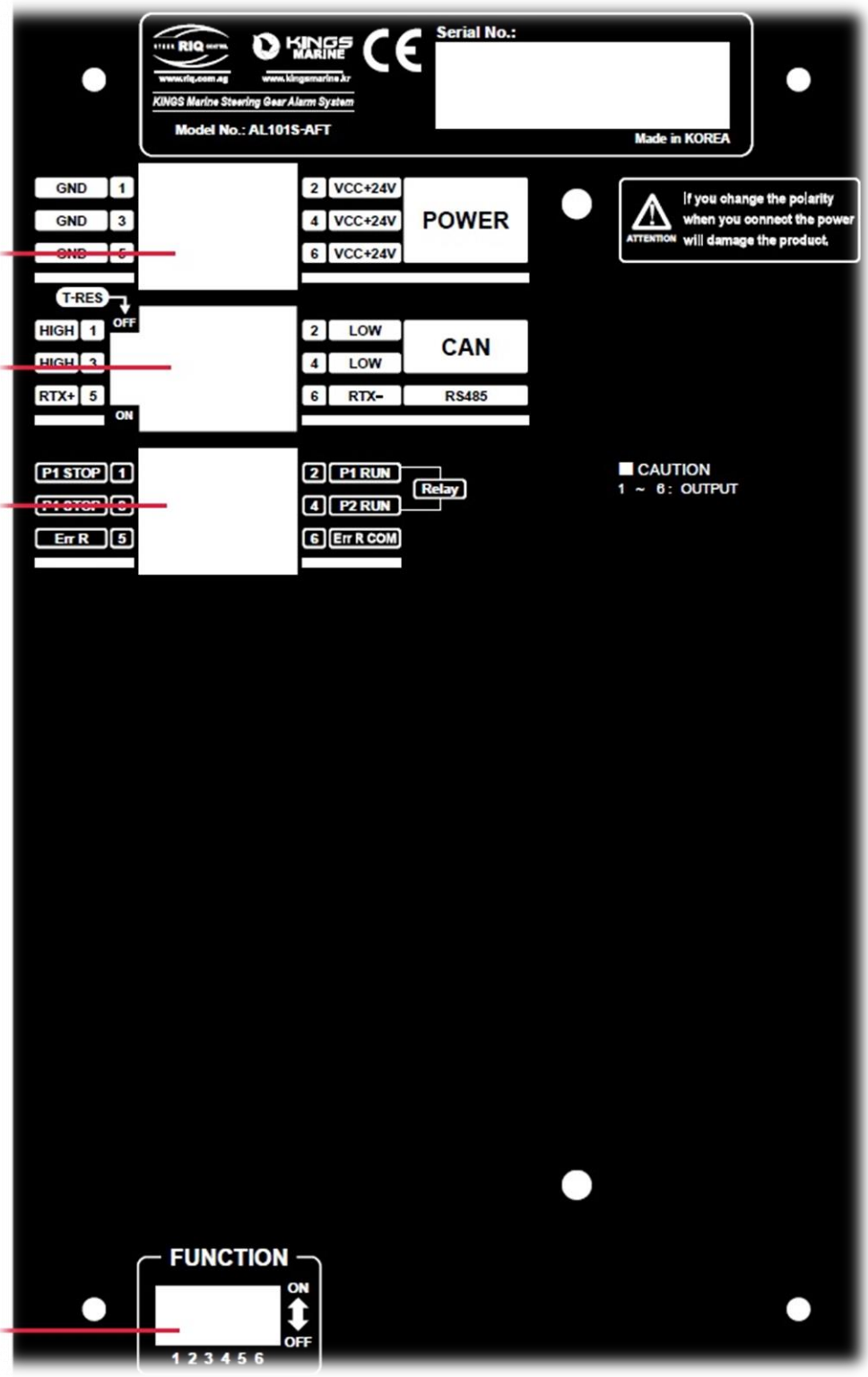
ECR input & output signal terminal



FWD input & output signal terminal



AFT input & output signal terminal



Chapter 4

Test flow

4.1 Purpose

: This alarm testing procedure is to check and confirm that the alarm system is working and meet the design requirement.

4.2 Testing Procedure

4.2.1 Connect the FWD, AFT & ECR panel as single line drawing.

4.2.2 Connect ECR panel to external alarm signals. The alarm signal can be turned off And on by a toggle switch. The signal is +24V DC. Put the switches in off position for all the alarm signals before testing.

4.3 Lamp test: Press the lamp test button, all the lamps on the panel should be on.

4.4 Dimmer test: When the lamp test button is pressed, press the dimmer button and the bright level will be change accordingly.

4.5 Individual alarms and indications test

DC ON

Step 1: Provide +24V DC at the FWD alarm panel input terminal+.
Step 2: DC ON indicator Green light is on all the panels.
Step 3: No alarm activated.
Step 4: Remove the input signal at +
Step 5: The indicator light color changes to Red and alarm activated.
Step 6: check output signal to other equipment at ECR panel when alarm activated

AUTOPILOT FAIL

Step 1: Close AUTOPILOT FAIL contact at the FWD panel input.
Step 2: Autopilot fail indicator Red light is blinking for all the panels.
Step 3: Buzzer sound.
Step 4: Press the Silence button, the autopilot fail indicator light is steady in Red and Buzzer is off.
Step 5: Press the alarm reset button, the buzzer sound again and indicator is blinking again
Step 6: Repeat Step 4.
Step 7: Cut off the AUTOPILOT FAIL contact, the autopilot fail indicator is still on
Step 8: Press alarm reset button again, the Autopilot alarm indicator light off.
Step 9: Check out signal to other equipment at ECR panel when alarm activated.

FU FAIL

Step 1: Close FU FAIL contact at the FWD panel input
Step 2: FU FAIL indicator light is blinking for all the panels.
Step 3: Buzzer sound.
Step 4: Press the silence button, the FU FAIL indicator light is steady and buzzer is off.
Step 5: Press the alarm reset button, the buzzer sound again and indication is blinking
Step 6: Repeat Step 4 .
Step 7: Cut off the FU FAIL contact, the autopilot fail indicator is still on.
Step 8: Press alarm reset button again, the alarm indicator light off
Step 9: Check out signal to other equipment at ECR panel when alarm activated

PUMP 1 RUN

Step 1: Close PUMP 1 RUN switch
Step 2: PUMP 1 RUN indicator light ON
Step 3: Buzzer not on.
Step 4: Open the PUMP 1 RUN switch
Step 5: Indicator light off

PUMP 1 STOP

Step 1: Close PUMP 1 STOP switch
Step 2: PUMP 1 STOP indicator light on
Step 3: Buzzer not on.
Step 4: Open the PUMP 1 STOP switch
Step 5: Indicator light off

PUMP 2 RUN & STOP

-To repeat PUMP 1 RUN & STOP test.

POWER 1 FAIL

Step 1: Provide + 24V DC to the ECR input terminal at P4A
Step 2: POWER 1 FAIL indicator light is blinking for all the panels.
Step 3: Buzzer sound.
Step 4: Press the silence button, the POWER 1 FAIL indicator light is steady and buzzer is off
Step 5: Press the alarm reset button, the buzzer sound again and indicator is blinking again
Step 6: Repeat Step 4.
Step 7: Stop supply +24V DC to the terminal input, the power 1 fail indicator is still on.
Step 8: Press alarm reset button again, the alarm indicator light off.
Step 9: Check out signal to other equipment at ECR panel when alarm activated.

*All the other alarm testing has the same testing procedure as POWER 1 FAIL test procedure.

TIME DELAY TEST

LOW OIL LEVEL: **3 second**
HYDRAULC LOCK: **1 second**
PHASE FAIL: **2 second**
FU FAIL: **1 second**
*The testing steps are same as POWER 1 FAIL.

Step 1: Provide alarm input signal to the respect alarm input terminal.
Step 2: Count the time between signal input and alarm activate.
Step 3: Compare the time between the setting an count.
Step 4: The time delay setting and count should follow the setting time

4.6 Testing for signal output to other equipment

FWD & AFT alarm panel relay Signal output

Input Signal	Input Location	Output Signal (FWD & AFT panels)	Output Qty Each Panel	Remark
PUMP 1 RUN	ECR	+24VDC	1	No alarm
PUMP 1 STOP	ECR	+24VDC	1	No alarm
PUMP 2 RUN	ECR	+24VDC	1	No alarm
PUMP 2 STOP	ECR	+24VDC	1	No alarm
PUMP 1 or PUMP 2 RUN	ECR	+24VDC	2	No alarm
PUMP 1 & PUMP 2 RUN	ECR	+24VDC	3	No alarm